

**NOT FOR PUBLICATION**

UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY

E.I. DU PONT DE NEMOURS &	:	
COMPANY,	:	
	:	CIVIL ACTION NO. 06-3383 (MLC)
Plaintiff,	:	
	:	<b>MEMORANDUM OPINION</b>
v.	:	
	:	
MACDERMID, INC., et al.,	:	
	:	
Defendants.	:	
_____	:	

**COOPER, District Judge**

Plaintiff, E.I. du Pont de Nemours & Company ("DuPont") commenced this action on April 28, 2006, against defendants, MacDermid, Inc. and MacDermid Printing Solutions, L.L.C. ("MacDermid") in the United States District Court for the District of Colorado alleging, inter alia, that the defendants have (1) manufactured and sold flexographic printing elements that directly infringe one or more claims of DuPont's United States Patent No. 6,171,758 B1 ("758 patent"), (2) encouraged others to directly infringe one or more claims of DuPont's '758 patent, (3) manufactured and sold flexographic printing elements to be used, treated, processed, or developed in a manner that directly infringe one or more claims of DuPont's United States Patent No. 6,773,859 B2 ("859 patent"), and (4) encouraged others to directly infringe one or more claims of DuPont's '859 patent. (D. Co. Civ. Action No. 06-816, dkt. entry no. 1, Compl., at ¶¶ 6-9, 14-17.) On July 17, 2006, the United States

District Court for the District of Colorado granted the parties' joint motion to transfer the action here. (Id., dkt. entry no. 30, 7-17-06 Ord.) Further, on August 7, 2006, DuPont voluntarily dismissed without prejudice all claims against MacDermid, Inc. pursuant to Federal Rule of Civil Procedure ("Rule") 41(a)(1). (Dkt. entry no. 5, Not. of Voluntary Dismissal.)

DuPont amended the complaint on February 7, 2007 to add a libel claim against MacDermid, which alleged that MacDermid wrote letters to DuPont's customers falsely claiming that DuPont made "threatening communications" to customers who were considering switching to MacDermid's infringing technology. (Dkt. entry no. 71, Am. Compl., at ¶¶ 21-22.) MacDermid filed an answer to DuPont's amended complaint and asserted counterclaims against DuPont seeking, inter alia, (1) a judgment declaring that it does not infringe the '758 patent or the '859 patent (counts I and II), (2) a judgment declaring that the '758 patent and '859 patent are invalid (counts III and IV) , (3) a judgment declaring that the '859 patent is unenforceable because either DuPont or its inventors engaged in fraud or inequitable conduct during its prosecution (count V), (4) judgment in its favor because "DuPont has used and continues to use the '859 patent and the '758 patent to violate 15 U.S.C. § 2 of the Sherman Anti-Trust Act by illegally attempting to monopolize the market for photopolymers for digitally laser imaged flexographic printing plates in the

United States" (count VI), and (5) judgment in its favor because DuPont has violated 15 U.S.C. § 2 of the Sherman Anti-Trust Act by engaging in "an intentional pattern and practice of claiming, as part of its [patented] invention, photopolymer plates while at the same time failing to disclose the composition of those photopolymer plates", and thus, preventing others from practicing the patented invention after the patent term expires (count VII). (Dkt. entry no. 73, 2d Am. Ans., Aff. Defenses, & Counterclaims, at 14-31.)

DuPont moves to preliminarily enjoin MacDermid from directly infringing its '859 patent. (Dkt. entry no. 31.) The Court has considered the papers submitted by the parties and heard oral argument on February 16, 2007. The Court hereby issues its findings of fact and conclusions of law with respect to the motion as required by Rule 52. For the reasons stated herein, the Court will deny the motion.

## **BACKGROUND AND FACTUAL FINDINGS**

### **I. Overview of Flexographic Printing Plates**

Flexographic printing plates are used to print images on packaging materials such as flexible films, paper, labels, and cups, as well as newspapers and magazines. (Pl. Br., at 4.) A flexographic printing plate consists of a transparent base layer, a photopolymerizable layer, and a cover sheet. (Id. at 5.) The base layer provides support for the other layers. (Id.) The

photopolymerizable layer contains elastomeric binders, monomers, photoinitiators and other additives, and thus, once it is developed it has a raised surface that depicts the image to be printed. (Id.) A digital flexographic printing plate has an additional infrared ablation layer, which is laminated directly onto the surface of the photopolymerizable layer. (Id.; see Def. Br., at 3 (noting that the "modern" method of developing a printing plate involves adding a UV absorbing layer directly to the photopolymerizable layer rather than having to place a phototool on top of the photopolymerizable layer).)

To develop an image on a digital flexographic printing plate, the printer must first peel off the cover sheet. (Pl. Br., at 5.) Next, a computer generated infrared laser is moved across the surface of the infrared ablation layer to remove portions of this layer depending upon the digitized image. (Id. at 5-6; Def. Br., at 3.) As a result, the desired image is transferred onto the infrared ablation layer and a photonegative or "in-situ mask" of the image to be printed is created. (Pl. Br., at 6; Def. Br., at 3.) The photopolymerizable layer is then exposed to UV light through the in-situ mask. (Pl. Br., at 7; Def. Br., at 3.) However, the portions of the infrared ablation layer that were not removed by the infrared laser block parts of the photopolymerizable layer from the UV light. (Pl. Br., at 7; Def. Br., at 3-4.) The parts of the photopolymerizable layer

that are exposed to the UV light polymerize, and thus, become insoluble to certain chemical solvents. (Pl. Br., at 7; Def. Br., at 4 ("Where the UV absorbing layer was removed by the laser, the UV light will cure and harden the photopolymerizable layer.")) Finally, the printing plate is washed with chemical solvents and scrubbed with mechanical brushes so that the remaining portions of the infrared ablation layer and the unpolymerized parts of the photopolymerizable layer are removed. (Pl. Br., at 7.) This leaves a raised surface or "printing relief" that can be used to print the desired image. (Id.) Because the flexographic printing plates absorb the chemical solvents, they must undergo a rigorous, lengthy, and costly drying process. (Id. at 9.) This drying step is labor intensive and requires large and expensive drying and emissions control equipment. (Id.)

MacDermid contends that there are a number of alternative methods for removing the remaining portions of the infrared ablation layer and the uncured parts of the photopolymerizable layer, including (1) using water and brushes, (2) using an "air knife" or forced air, and (3) heating the plate to cause the uncured parts to soften and then removing the softened uncured parts with an absorbent material or blotter (i.e., thermal development). (Def. Br., at 4.) DuPont asserts that its scientists and engineers actually invented the thermal

development process. (See Pl. Br., at 7.) MacDermid asserts, however, that "even at this early stage of the litigation, it is clear that DuPont invented nothing." (Def. Br., at 4.)

## **II. The '859 Patent**

The '859 patent discloses "a process for preparing a flexographic printing plate from a photosensitive element having a photopolymerizable layer and a thermally removable layer on the photopolymerizable layer." (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at Abstract.) It is composed of 54 claims, but only claims 1 and 51 are independent. (See id. at cols. 43-48.) Claim 1 states:

1. A process for making a flexographic printing plate comprising:
  - 1) providing a photosensitive element comprising:  
at least one photopolymerizable layer on a support comprising an elastomeric binder, at least one monomer, and a photoinitiator, and at least one thermally removable layer disposed above the photopolymerizable layer, the thermally removable layer selected from the group consisting of
    - (a) an actinic radiation opaque layer comprising (i) at least one infrared absorbing material, (ii) a radiation opaque material, wherein (i) and (ii) can be the same or different, and at least one binder having a softening or melting temperature less than 190°C;
    - (b) a layer of a composition comprising at least one binder and filler, wherein the binder is less than 49% by weight based on the total weight of the binder and filler, and
    - (c) a layer of particulate material having a particle size of less than 23 micrometers;
  - 2) imagewise exposing the photopolymerizable layer to actinic radiation forming polymerized portions and unpolymerized portions; and
  - 3) thermally treating the element of step 2) by

heating to a temperature sufficient to remove the thermally removable layer and to remove the unpolymerized portions of the photopolymerizable layer and form a relief.

(Id. at col. 43, lines 14-40.)

DuPont introduced its commercial embodiment of claim 1, Cyrel® FAST ("Cyrel"), in 2001. (Pl. Br., at 10-11.) DuPont asserts that Cyrel pioneered and first commercialized the "growing and commercially successful market for the thermal development of digital flexographic printing plates." (Id. at 10.) In fact, DuPont states that it sold more than \$90 million worth of digital flexographic printing plates that can be thermally developed between 2001 and August of 2006. (Id. at 11.)<sup>1</sup> Also, DuPont notes that in 2003, Cyrel received the Flexographic Technical Association's "Technical Innovation Award". (Id. at 12.)

MacDermid launched its LAVA products in April of 2004. (Def. Br., at 10.) It installed a thermal processing system and began selling its LAVA flexographic printing plates in November of 2004. (Id.; Pl. Br., at 12 (noting that MacDermid markets and sells a thermal processing system known as LAVA, as well as flexographic printing plates).) MacDermid has invested over \$4 million in the research and development of its thermal

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<sup>1</sup> The equipment required to thermally process DuPont's digital flexographic printing plates is typically leased or loaned to customers for a multi-year period. (Id.)

development technology, and has spent over \$797,000 marketing its LAVA products. (Def. Br., at 11.) DuPont tested and analyzed MacDermid's MLT and Magma printing plates in late 2005. (Id. at 10; Pl. Br., at 15.) DuPont contends that "MacDermid markets its LAVA thermal processing system and equipment and MLT and Magma flexographic printing plates as providing the same benefits and having the same features as DuPont's [Cyrel] technology, describes its infringing technology with a numbering system designed to draw a close parallel in the minds of customers with DuPont's FAST thermal process equipment, and has even sought a license from DuPont to use the patented technology it is now offering to customers." (Pl Br., at 13.) DuPont further contends that in addition to copying DuPont's patented thermal technology, MacDermid has also adopted the same naming conventions for its equipment. (Id. at 14 (noting that DuPont calls its thermal processing equipment "Cyrel® FAST TD 4260" and MacDermid calls its thermal processing equipment "LAVA 4260").)

### **III. The Prosecution History of the '859 Patent**

The original application for the '859 patent was filed with the United States Patent and Trademark Office ("PTO") on February 27, 2002. (Dkt. entry no. 46, Mahanna Decl., Ex. 2, at A-2, 2-27-02 Utility Patent Application Transmittal.) The patent application listed "Roxy Ni Fan, et al." as the inventor and "a process for making a flexographic printing plate and a



photosensitive element for use in the process" as the patent's title. (Id.) The applicants filed an Information Disclosure Statement with the application, which informed the PTO about the existence of (1) United States Patent Nos. 3,060,024 ("Burg '024 patent")<sup>2</sup>, 3,060,025 ("Burg '025 patent"), 3,264,103 ("Cohen '103 patent"), 4,429,027 ("Chambers '027 patent"), 5,175,072 ("Martens '072 patent"), 5,262,275 ("Fan '275 patent"), 5,607,814 ("Fan '814 patent"), 5,719,009 ("Fan '009 patent"), 5,840,463 ("Blanchet '463 patent"), and 5,888,697 ("Fan '697 patent"), and (2) European Patent Nos. 0665469 ("3M '469 patent"), 0665471 ("3M '471 patent"), and 0741330 ("DuPont '330 patent"). (Id. at B-1 to B-2, 2-27-02 Information Disclosure Stmt.) Also, the applicants filed a Supplemental Information Disclosure Statement on February 24, 2003 disclosing the existence of United States Patent Application No. 2002/0009672 ("Daems '672 patent application"). (Id. at E-1 to E-3, 2-24-03 Information Disclosure Stmt.)<sup>3</sup>

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<sup>2</sup> We refer to these patents using the name of the first patentee or applicant listed on the Information Disclosure Statement in conjunction with the last three numbers of the patent.

<sup>3</sup> The Daems '672 patent application is "[n]on-provisional of provisional application No. 60/214,016, filed on Jun. 26, 2000." (Id., Ex. 3, Daems '672 patent application.) The Daems '672 patent application was filed on January 24, 2002, approximately one month before the '859 patent application was filed. (Id.; Defs. Br., at 7.)

The PTO issued an Office Action in which the patent examiner (1) allowed claims 51-54, (2) rejected claims 1-7, 9-10, 14-16, 18, 28-30, 33-42, and 45-50, and (3) objected to claims 8, 11-13, 17, 19, 31-32, and 43-44. (Id. at F-2, 9-29-03 Office Action.) The patent examiner stated that he was rejecting claims 1-7, 9-10, 14-16, 18, 28-30, 33-42, and 45-50 because they were either anticipated under 35 U.S.C. § ("Section") 102(a) and (e), or obvious under Section 103(a) in light of the Daems '672 patent application. (Id. at F-4, 9-29-03 Office Action.) The patent examiner explained that the Daems '672 patent application:

discloses processes using elements comprising photopolymerizable layers containing elastomeric binders overcoated with thermally removable layers comprising binders, infrared absorbing materials and opaque materials within the scope of the thermally removable layers of paragraph "a" of the instant claims. The thermally removable layer is thermally imaged to form a mask and then the element is photopolymerized and thermally treated to remove unpolymerized areas and the thermally removable opaque layers. If [the Daems '672 patent application] do[es] not anticipate the instant claims, then it would at least be obvious to one skilled in the art to select thermally removable layers, photopolymerizable layers, thicknesses and processing temperatures from the generic disclosure in [the Daems '672 patent application] in order to carry out the processes of [the Daems '672 patent application].

(Id.) The patent examiner also explained that claims 8, 11-13, 17, 19, 31-32, and 43-44 were only objectionable because they depended on rejected claims, and thus, they would be allowed if written in independent form. (Id.)

The applicants responded to the Office Action on March 29, 2004. (Id. at G-1 to G-2, 3-29-04 Resp.) In addition to the response, the applicants submitted a declaration by co-inventor Adrian Lungu, which showed that the claimed invention had been completed in the United States on or before June 9, 1999. (Id. at G-1 to G-14, 3-29-04 Resp. & Lungu Decl.) Thus, the applicants asserted that the Daems '672 patent application was "no longer available for use as a reference in rejecting the present claims" because the claimed invention predated the filing of the Daems '672 patent application. (Id. at G-2, 3-29-04 Resp.) Accordingly, the applicants (1) alleged that the claimed invention was not anticipated or obvious to one skilled in the art, and (2) requested that the patent examiner reconsider his rejection of certain claims. (Id.)

The PTO then issued a Notice of Allowability, which allowed claims 1 through 51. (Id. at I-1.) The form used to transmit the issue fee and publication fee, which was received by the PTO on April 22, 2004, lists DuPont as the assignee of the '859 patent. (Id. at J-1, 4-22-04 Fee(s) Transmittal Form.) The PTO issued the '859 patent on August 10, 2004. (Id., Ex. 1, '859 patent.)

#### **CONCLUSIONS OF LAW**

DuPont argues, inter alia, that MacDermid should be preliminarily enjoined from infringing its '859 patent because

(1) there is a strong likelihood that it will prevail on the merits, (2) it will be irreparably harmed by MacDermid's continued infringement, (3) the balance of the hardships favors granting the injunction, and (4) the public interest favors granting the injunction. (See Pl. Br., at 18-40.) In contrast, MacDermid argues that (1) DuPont has failed to meet its burden of showing that it will likely succeed on the merits, (2) DuPont cannot establish that it will suffer immediate and irreparable harm absent an injunction, (3) the hardship that an injunction would cause to MacDermid outweighs any alleged harm DuPont would face absent an injunction, and (4) the public interest weighs strongly against granting the injunction. (See Def. Br., at 12-55.) The findings and conclusions set forth in this opinion are preliminary only, and based upon the state of the record at this stage in the litigation. See Fed.R.Civ.P. 65(a). The parties have preserved all rights to present their disputes to a fact-finder for eventual adjudication on the merits.

#### **I. Legal Standards Governing Preliminary Injunctions in Patent Infringement Actions**

The Court, in its discretion, may grant a preliminary injunction "to prevent the violation of any right secured by patent." 35 U.S.C. § 283; see Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1364 (Fed. Cir. 1997). Injunctive relief is a "drastic and extraordinary remedy", which should be granted only in limited circumstances. Nat'l Steel Car, Ltd. v. Canadian

Pac. Ry., Ltd., 357 F.4d 1319, 1324 (Fed. Cir. 2004). To obtain such interim relief, a movant must demonstrate (1) a reasonable likelihood of success on the merits, (2) irreparable harm if the injunction is not granted, (3) that the balance of hardships favors granting the preliminary relief, and (4) that granting the preliminary relief is in the public interest. PHG Tech., LLC v. St. John Cos., Inc., 469 F.3d 1361, 1365 (Fed. Cir. 2006); Pfizer, Inc. v. Teva Pharm. USA, Inc., 429 F.3d 1364, 1372 (Fed. Cir. 2005); Genentech, Inc., 108 F.3d at 1364. “[A] movant cannot be granted a preliminary injunction unless it established both of the first two factors, i.e., likelihood of success on the merits and irreparable harm.” PHG Tech., LLC, 469 F.3d at 1365.

#### **A. Reasonable Probability of Success on the Merits**

In order to demonstrate a likelihood of success on the merits, the patent holder seeking the preliminary injunction must show that (1) “in light of the presumptions and burdens that will inhere at trial on the merits” infringement will likely be shown, and (2) the infringement claim will withstand challenges to the validity and enforceability of the patent. Genentech, Inc., 108 F.3d at 1364; see Entegris, Inc. v. Pall Corp., Nos. 04-1440, 05-1265, 05-1266, & 06-1374, 2007 U.S. App. LEXIS 13812, at \*32 (Fed. Cir. June 13, 2007) (noting that a patent holder seeking a preliminary injunction bears the burden of establishing a likelihood of succeed on the merits with respect to the patent’s validity). Thus, the Court cannot issue the preliminary

injunction if the opposing party raises a "substantial question" regarding the validity, enforceability, or infringement of the patent. Genentech, Inc., 108 F.3d at 1364; see Entegris, Inc., 2007 U.S. App. LEXIS 13812, at \*32 (stating that a preliminary injunction should not issue if the alleged infringer raises a "substantial question" regarding the invalidity of the patent).

### **1. Infringement**

An infringement inquiry is a two-step process. First, the Court must determine the scope and meaning of the patent claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996). Construction of a patent's claims is a matter of law for the Court. Markman, 517 U.S. at 372 ("[T]he construction of a patent, including terms of art within its claim, is exclusively within the province of the Court.") Second, the allegedly infringing product is compared to each claim at issue to determine whether the product contains every limitation contained in each claim or the substantial equivalent of any limitation not literally present. Amazon.com, Inc. v. Barnesandnoble.com, Inc., 239 F.3d 1343, 1351 (Fed. Cir. 2001); Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535 (Fed. Cir. 1991).

There is a "'heavy presumption' that a claim term carries its ordinary and customary meaning." CCS Fitness Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). The

ordinary and customary meaning of a claim term is the meaning a "person of ordinary skill in the art in question" would give to such term on the effective filing date of the patent application. Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). Such a person is deemed to interpret the claim term in the context of the entire patent, including the specification. Id. A claim term should generally be given its ordinary meaning unless the patentees "clearly set forth a definition of the disputed claim term in either the specification or prosecution history." CCS Fitness Inc., 288 F.3d at 1366. Thus, words in a claim are generally given their ordinary and customary meaning in the absence of a contrary indication in the patent specification or file history. Wolverine Worldwide, Inc. v. Nike, Inc., 38 F.3d 1192, 1196 (Fed. Cir. 1994).

When interpreting an asserted patent claim, the Court should look first to the intrinsic evidence of record, which includes the patent's claims, the patent's specification, and the complete prosecution history. Markman, 52 F.3d at 979. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language. Vitronic Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). In reviewing this intrinsic evidence, the Court considers the context in which a term is used within both the claim at issue and the claims that are not at issue. Phillips, 415 F.3d at

1314. Further, the Court must interpret claim terms in light of the specification. Id. at 1315 (noting that specification is highly relevant to claim construction and usually dispositive).

The Court, in addition to reviewing the specification, should also consider the patent's prosecution history. Id. at 1317; Graham v. John Deere Co., 383 U.S. 1, 33 (1966) ("It is, of course, well settled that an invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office.") The doctrine of "prosecution history estoppel" requires that a patent's claims be interpreted in light of all PTO proceedings that occurred during the patent application process. Festo Corp. v. Shoketsu Kinzoku Co., Ltd., 535 U.S. 722, 733 (2002) (noting that "prosecution history estoppel" ensures that claims are interpreted in light of those claims that were cancelled or rejected). Accordingly, the prosecution history is useful in claim construction because it demonstrates how the inventor limited the invention during the course of the patent prosecution, and thus, narrowed the scope of the ultimately patented product. Phillips, 415 F.3d at 1317. Nevertheless, because the prosecution history reflects the ongoing negotiations between the inventor and the PTO, it is often less clear and less useful than the specification. Id.



The ordinary meaning of claim language as understood by a person of skill in the art will be readily apparent to a lay judge in some instances, after he or she reviews the intrinsic evidence, and claim construction will involve simply applying the widely accepted meanings of commonly understood words. Id. at 1314. In such circumstances, general purpose dictionaries may be helpful. Id. However, "heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." Id. at 1321.

## **2. Validity**

A patent is presumed to be valid, and each of its claims are presumed valid independent of the validity of other claims. 35 U.S.C. § 282. A party asserting the invalidity of a patent or one or more of its claims has the burden of establishing such invalidity, which is satisfied only by clear and convincing evidence. Id.; Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 446 (Fed. Cir. 1986). Clear and convincing evidence is evidence that proves in the mind of the trier of fact an abiding conviction that the truth of the factual contentions is highly probable. Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 830 (Fed. Cir. 1991). However, a party opposing a preliminary injunction need only raise a "substantial question"

of invalidity. Entegris, Inc., 2007 U.S. App. LEXIS 13812, at \*32. The “showing of a substantial question as to invalidity . . . requires less proof than the clear and convincing showing necessary to establish invalidity itself.” Id. (omission in original); Abbott Lab. v. Andrx Pharm., Inc., 452 F.3d 1331, 1335 (Fed. Cir. 2006) (“Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial.”). Thus, if the alleged infringer asserts an invalidity defense that the patent holder cannot prove “lacks substantial merit,” the Court should not issue the preliminary injunction. Entegris, Inc., 2007 U.S. App. LEXIS 13812, at \*32; see Genetch, Inc., 108 F.3d at 1364 (noting that the presumption that a patent is valid does not relieve a patentee moving for a preliminary injunction from demonstrating likely success on all disputed issues, even those concerning the patent’s validity).

### **B. Irreparable Injury**

The Court should presume that a patent holder will be irreparably harmed if such holder “establishes a strong showing of likely infringement of a valid and enforceable patent.” Pfizer, Inc., 429 F.3d at 1381; see Cordis Corp. v. Boston Scientific Corp., 99 Fed.Appx. 928, 933 (Fed. Cir. 2004) (“Once a patentee shows a likelihood of success on the merits, the court’s law presumes an irreparable harm.”) However, there are exceptions to the general rule that infringement of a valid

patent inherently causes irreparable harm, including a finding that (1) future infringement is unlikely, (2) the patent holder has licensed the patent, or (3) the patent holder delayed in bringing the infringement action. Pfizer, Inc., 429 F.3d at 1381; see Cordis Corp., 99 Fed.Appx. at 933-35 (acknowledging that delay in bringing an action, seeking monetary damages, granting licenses, and relative market effects are factors that may be considered by a court when determining whether the defendant has rebutted the presumption of irreparable harm). If a presumption of irreparable harm attaches, the alleged infringer has the burden of producing sufficient evidence establishing that the patent holder would not be irreparably harmed by denial of the preliminary injunction. Pfizer, Inc., 429 F.3d at 1381. The presence of other infringers in the marketplace does not negate irreparable harm. Id.

### **C. Harm to Nonmoving Party**

The Court must balance the hardships to ensure that the injunction would not harm the alleged infringer more than denial of the injunction would harm the patent holder. See id. at 1382. However, "an alleged infringer's loss of market share and customer relationships, without more, does not rise to the level necessary to overcome the loss of exclusivity experienced by a patent owner due to infringing conduct." Id.

**D. The Public Interest**

The public interest will almost always favor the plaintiff, if both a likelihood of success on the merits and irreparable injury are demonstrated. See Anton/Bauer, Inc. v. PAG, Ltd., 329 F.3d 1343, 1353 (Fed. Cir. 2003) (noting that the court need not address the public interest factor because the first two preliminary injunction factors were not present). Nevertheless, although the public has an interest in upholding the exclusive rights of a patent holder, this interest "cannot control in every case without obliterating the public interest component of the preliminary injunction inquiry." Cordis Corp., 99 Fed.Appx. at 935. Accordingly, the Court must still consider whether any strong public interests weigh against issuing a preliminary injunction in a patent infringement case. See id. at 935-36 (finding that the district court did not err in considering the public's strong interest in having a broad choice of drug-eluting stents in reaching its determination that a patent holder was not entitled to a preliminary injunction).

## II. Legal Standards Applied Here

### A. Reasonable Likelihood of Success on the Merits

#### 1. Construction of Claim 1<sup>4</sup>

Claim 1 describes a process for making a flexographic printing plate comprised of a number of elements. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43 lines 14-40.) We will now discuss each claim construction issue raised by the parties in their Markman briefs that pertains to claim 1 of the '859 patent, and tentatively construe those terms that are in dispute.<sup>5</sup> See Aventis v. Barr Lab., Inc., 411 F.Supp.2d 490, 495

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<sup>4</sup> DuPont contends that MacDermid is infringing claims 1, 6, 21, 22, 30, 33, 36, 39, 40, 41, and 48 of the '859 patent. (Dkt. entry no. 77, Mahanna Decl., Ex. 3., DuPont's Interrogatory Responses, at 11-15.) However, claims 6, 21, 22, 30, 33, 36, 39, 40, 41, and 48 each depend on claim 1, and thus, the Court finds that its construction of these claims is consistent with its construction of claim 1 discussed infra. Further, both in their briefs in support of and in opposition to the preliminary injunction motion and at the hearing held on February 16, 2007, the parties limited their discussion to claim 1. Therefore, for purposes of deciding this preliminary injunction motion, the Court will tentatively construe only claim 1 of the '859 patent.

<sup>5</sup> In its opening Markman brief, DuPont proposed constructions of 4 phrases or terms found in claim 1 of the '859 patent. (DuPont Markman Br., at 11-16.) MacDermid responded to each of DuPont's proposed constructions. (MacDermid Br. in Opp. to DuPont Markman Br., at 4-10.) Further, MacDermid, in its opening Markman brief, proposed construction of approximately 21 phrases or terms found in claim 1 of the '859 patent. (MacDermid Markman Br., at 26-29, 35-43.) However, DuPont only responded to 12 of MacDermid's proposed constructions. (DuPont Responsive Claim Construction Br., at 22-37.) DuPont stated that it was "forced" to respond to certain of MacDermid's proposed definitions due to "MacDermid's strained claim construction analysis", but added that it would not burden the Court "by proposing constructions for the remaining . . . phrases addressed

(D.N.J. 2006) (acknowledging that at the preliminary injunction stage the district court has discretion to base its resolution on a tentative claim construction).

**a. "photosensitive element"**

Limitation 1 of claim 1 states that the process for making a flexographic printing plate must "provid[e] a photosensitive element". (Id. at col. 43, line 16.) DuPont asserts that the "photosensitive element" is a multi-layer article comprised of (1) a support, (2) at least one photopolymerizable layer, and (3) at least one thermally removable layer located above the photopolymerizable layer. (DuPont Markman Br. at 11.) MacDermid, however, argues that DuPont's interpretation of "photosensitive element" improperly renders other claim language redundant. (MacDermid Br. in Opp. to DuPont Markman Br., at 4.) Instead, MacDermid asserts that "photosensitive element" should be construed in accordance with its ordinary and customary meaning as "[a] printing plate sensitive and responsive to light or other radiant energy such that it polymerizes". (Id. at 4-5.)

Limitation 1 of claim 1 expressly states that the "photosensitive element" is comprised of "at least one photopolymerizable layer on a support . . ., and at least one

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in MacDermid's opening brief". (Id. at 22.) Thus, the Court will assume for purposes of deciding this preliminary injunction motion that DuPont accepts MacDermid's proposed construction of those terms or phrases that DuPont did not address in its brief in response to MacDermid's opening Markman brief.

thermally removable layer disposed above the photopolymerizable layer". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 16-20.) See Phillips, 415 F.3d at 1314 (noting that in construing a claim term the Court must consider the context in which the term is used within the claim at issue). Further, this term is defined in a substantially similar way in the patent's specification. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 4, lines 65 to col. 5, line 2 & col 5, lines 58-61.) See Phillips, 415 F.3d at 1315 (stating that the Court must interpret claim terms in light of the specification). Accordingly, in light of the intrinsic evidence, the Court finds that the term "photosensitive element" as it is used in limitation 1 of claim 1 encompasses a component of the flexographic printing plate having a support and at least one thermally removable layer disposed above at least one photopolymerizable layer.

**b. "photopolymerizable layer"**

Limitation 1 of claim 1 states that the photosensitive element is comprised of, inter alia, a photopolymerizable layer. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 16-17.) MacDermid asserts that "photopolymerizable layer" means a "radiation curable composition". (MacDermid Markman Br., at 35.) MacDermid also asserts that the specification "mandates [its] proposed construction of

'photopolymerizable layer'". (Id.) DuPont, however, contends that claim 1 clearly defines "photopolymerizable layer" as "a layer comprising an elastomeric binder, at least one monomer, and a photoinitiator". (DuPont Responsive Claim Construction Br., at 30.)

The Court agrees with DuPont that the plain language of limitation 1 of claim 1 expressly states that the "photopolymerizable layer" is comprised of (1) an elastomeric binder, (2) at least one monomer, and (3) a photoinitiator. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 17-19.) Moreover, the specification describes the "photopolymerizable layer" as

comprising an elastomeric binder, at least one monomer, and a photoinitiator. (Id. at col. 4, line 66 to col. 5, line 1 & col. 5, lines 21-23.)

formed of a composition comprising a thermoplastic binder, at least one monomer and a photoinitiator. The thermoplastic binder is preferably is [sic] elastomeric. The photoinitiator has sensitivity to actinic radiation. (Id. at col. 5, line 64 to col. 6, line 1.)

Thus, the intrinsic evidence specifically sets forth the meaning of "photopolymerizable layer". See Vitronic Corp., 90 F.3d at 1583 (noting that intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.)

Although both limitation 2 of claim 1 and the specification state that in making the flexographic printing plate the



photopolymerized layer will be exposed to actinic radiation so that portions become polymerized or cured, such information is not relevant in construing the meaning of "photopolymerizable layer". (See dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col 5., lines 12-14, col. 20, lines 29-32, col. 20, lines 47-50, & col. 43, lines 34-36, .) Instead, it is relevant to determining whether MacDermid's LAVA products infringe the '859 patent. The Court will not construe "photopolymerizable layer" in terms of how that layer is used in the claimed process. Therefore, the Court finds that a "photopolymerizable layer" is a layer comprised of an elastomeric binder, one or more monomers, and a photoinitiator.

**c. "support"**

Limitation 1 of claim 1 states that the photopolymerizable layer is "on a support". (Id. at col. 43, line 17.) In offering their proposed constructions of the term "support", both parties reference the following statement in the specification: "The support can be any flexible material that is conventionally used with photosensitive elements used to prepare flexographic printing plates." (Id. at col. 8, lines 25-27.) Based on this statement in the specification, MacDermid argues that "support" should be construed as meaning "a flexible material used to support the photopolymerizable layer of flexographic printing plates". (MacDermid Markman Br., at 36.) In contrast, DuPort

argues that the Court should adopt the exact definition of "support" set forth in the specification. (DuPont Responsive Claim Construction Br., at 31.) The Court agrees with DuPont that it should adopt the definition of "support" set forth in the specification. See Semitool, Inc. v. Novellus, Sys., Inc., 44 Fed.Appx. 949, 954 (Fed. Cir. 2002) ("When the meaning of a term used in a claim is sufficiently clear from its definition in the patent specification, that meaning shall apply."); CCS Fitness Inc., 288 F.3d at 1366 (stating that a claim term should generally be given its ordinary meaning unless the patentees "clearly set forth a definition of the disputed claim term in either the specification or prosecution history"). Accordingly, the Court finds that the "support" referenced in limitation 1 of claim one may be any flexible material that is conventionally used with photosensitive elements to prepare flexographic printing plates.

**d. "elastomeric binder"**

Limitation 1 of claim 1 states that the photopolymerizable layer is comprised of, inter alia, "an elastomeric binder". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, line 18.) MacDermid asserts that such term should be interpreted as encompassing "an elastic polymer or mixture of elastic polymers in the photopolymerizable layer". (MacDermid Markman Br., at 36.) In contrast, DuPont asserts that the

specification defines "elastomeric binder" as "a single polymer or mixture of polymers". (DuPont Responsive Claim Construction Br., at 31.)

The Court acknowledges that the '859 patent's specification, in describing the preferred embodiments, notes that the "thermoplastic binder can be a single polymer or mixture of polymers". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 6, lines 9-10.) Nevertheless, although the specification sets forth what constitutes a "binder" it does not specifically define the terms "elastomeric" or "elastomeric binder".

Webster's Ninth New Collegiate Dictionary defines "elastomer" as "any of various elastic substances having resembling rubber". Webster's Ninth New Collegiate Dictionary 400 (1991) (listing "elastomeric" as the adjective form of the noun "elastomer"); see Phillips, 415 F.3d at 1314 (noting that general purpose dictionaries may assist courts in determining widely accepted meanings of commonly used words). The preferred embodiment section of the specification describes various types of natural and synthetic polymers or combinations of polymers that may comprise the binder in the photopolymerizable layer (e.g., "[p]referably the thermoplastic binder is an elastomeric block copolymer of an A-B-A type block copolymer, where A represents a non-elastomeric block, preferably a vinyl polymer and more preferably polystyrene, and B represents an elastomeric

block, preferably polybutadiene or polyisoprene"). (Id. at col. 6, lines 9-44.) However, the Court will not construe the term "elastomeric binder" as simply a polymer or mixture of polymers because such construction would render the modifier "elastomeric" meaningless. The Court also will not read the preferred embodiment as imposing limitations on the '859 patent's claims, particularly when the specification does not provide an express definition of "elastomeric binder" but instead lists a number of suitable polymers and combinations of polymers that may comprise the binder. See Phillips, 415 F.3d at 1323 (warning against confining claims to the preferred embodiment and rejecting contention that if a patent describes only one preferred embodiment, the claims of the patent must be limited in accordance with that embodiment). Thus, the Court finds that the term "elastomeric binder" in limitation 1 of claim 1 encompasses a single elastic polymer or a mixture of elastic polymers.

**e. "monomer"**

Limitation 1 of claim 1 states that the photopolymerizable layer is comprised of, inter alia, "at least one monomer". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, line 18.) MacDermid asserts that such term should be interpreted as encompassing "a compound or mixture of compounds that forms a polymer by direct combination or addition with itself or other similar molecules or compounds". (MacDermid Markman Br., at 37.) DuPont, however, asserts that the term "monomer" simply refers to

"a compound capable of addition polymerization". (DuPont Responsive Claim Construction Br., at 32.)

The '859 patent's specification, in describing its preferred embodiments, states:

The photopolymerizable composition contains at least one compound capable of addition polymerization that is compatible with the binder to the extent that a clear, non-cloudy photosensitive layer is produced. The at least one compound capable of addition polymerization may also be referred to as a monomer and can be a single monomer or a mixture of monomers. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 6, lines 45-51.)

Accordingly, the specification expressly states that a monomer is "at least one compound capable of addition polymerization".

(Id.) Moreover, Webster's Ninth New Collegiate Dictionary defines "monomer" as "a chemical compound that can undergo polymerization". Webster's Ninth New Collegiate Dictionary 954 (1991); see Phillips, 415 F.3d at 1314.

The preferred embodiment section of the specification provides examples of suitable monomers that can be used in the photopolymerizable layer after noting that such monomers "are well known in the art". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 6, line 51 to col. 7, line 20.) However, as previously stated, this Court will not read the preferred embodiment as imposing limitations on the '859 patent's terms, particularly when the term at issue has a commonly used meaning in the art and is generally defined in the specification. See

Phillips, 415 F.3d at 1323 (warning against confining claims to the preferred embodiment and rejecting contention that if a patent describes only one preferred embodiment, the claims of the patent must be limited in accordance with that embodiment). Thus, in light of the intrinsic evidence set forth in the specification and the extrinsic evidence found in the dictionary definition, the Court finds that the term "monomer" in limitation 1 of claim 1 means a chemical compound capable of addition polymerization. Also, the Court finds that the "at least one" language that precedes the term "monomer" in limitation 1 of claim 1 suggests that the photopolymerizable layer may be comprised of one or more chemical compounds capable of addition polymerization.

**f. "thermally removable layer"**

Limitation 1 of claim 1 lists three types of thermally removable layers that may be used to comprise the photosensitive element. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 21-33.) DuPont contends that a "thermally removable layer" means a layer "that can heated [sic] to a temperature that will allow the layer to be removed during the thermal development process." (DuPont Markman Br., at 14.) Although MacDermid argues that DuPont's rationale for its proposed construction of "thermally removable layer" should be rejected, it states that DuPont's construction "is not

inconsistent with that proposed by MacDermid . . . [and thus] either construction may be adopted". (MacDermid Br. in Opp. to DuPont Markman Br., at 5 (stating that MacDermid's construction of "thermally removable layer" is "[a] layer capable of being removed by the application of heat").) Therefore, the Court adopts DuPont's interpretation.<sup>6</sup>

**g. "infrared absorbing"**

Limitation 1 of claim 1 states that the thermally removable layer is selected from a group consisting of 3 choices, including an actinic radiation opaque layer comprising, inter alia, "at least one infrared absorbing material". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 21-24.) MacDermid contends that "infrared absorbing" means "[c]apable of absorbing and sensitive to electromagnetic radiation with wavelengths from 750 nm to 1 mm. Sensitive to includes the capability of being removed through the application of infrared

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<sup>6</sup> In addressing the proper construction of the term "thermally removable layer" the parties dispute whether proper construction of claim 1 should include both digital imaging and analog imaging followed by thermal development. (MacDermid Markman Br., at 26-29; DuPont Responsive Claim Construction Br., at 22-27.) However, because MacDermid stated that DuPont's proposed construction of "thermally removable layer" is not inconsistent with its proposed construction, the Court need not address this dispute over what types of imaging are encompassed in limitation 1 of claim 1 for purposes of tentatively construing claim 1 in connection with deciding the preliminary injunction motion. Nevertheless, the Court acknowledges that it will likely need to address whether the '859 patent encompasses both digital and analog printing plates at a later time.

radiation". (MacDermid Markman Br., at 38.) In contrast, DuPont contends that the Court does not need to construe "infrared absorbing" because "the meaning of the phrase is clear and unambiguous on its face". (DuPont Responsive Claim Construction Br., at 33.) In the alternative, DuPont asserts that if the Court believes the term does need further clarification, it should construe it as meaning "capable of absorbing and sensitive to electromagnetic radiation with wavelengths from 750 nm to 20,000 nm (i.e., the infrared laser range)". (Id.)

The Court agrees with DuPont that "infrared absorbing" is an unambiguous term that means capable of absorbing infrared light. "Infrared" is commonly used and has a widely accepted meaning. See Phillips, 415 F.3d at 1314 (explaining that the ordinary meaning of claim language will often be readily apparent to a lay judge, and thus, claim construction will involve simply applying the widely accepted meanings of commonly understood words). Specifically, "infrared" refers to light "lying outside the visible spectrum at its red end - used of thermal radiation of wavelengths longer than those of visible light". Webster's Ninth New Collegiate Dictionary 621 (1991); see Merriam-Webster Online Dictionary (2005) (defining infrared as "situated outside the visible spectrum at its red end - used of radiation having a wavelength between 700 nanometers and 1 millimeter"). Thus, the Court finds that "infrared absorbing" means capable of absorbing



light lying outside the visible spectrum at its red end with a wavelength between 700 nanometers and 1 millimeter. The Court acknowledges that the specification describes a process where the infrared laser exposure is "carried out using various types of infrared lasers, which emit in the range 750 to 20,000 nm", but again the Court will not use the specification to limit an unambiguous claim term. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 17, lines 39-41.) See Phillips, 415 F.3d at 1323.<sup>7</sup>

#### **h. "binder"**

Limitation 1 of claim 1 states that the thermally removable layer is selected from a group consisting of 3 choices. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 20-33.) One choice is an actinic radiation layer comprising, inter alia, "at least one binder" ("choice a"). (Id. at col. 43, lines 23-27.) A second choice is "a layer of composition comprising at least one binder and filler, wherein the binder is less than 49% by weight based on the total weight of the binder and filler" ("choice b"). (Id. at col. 43, lines 28-31.) MacDermid argues that "binder" should be construed as "[a] single polymer or mixture of polymers in the thermally removable layer". (MacDermid Markman Br., at 40.) DuPont,

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<sup>7</sup> 20,000 nanometers equals .02 millimeters, but infrared light encompasses the range from 750 nanometers to 1 millimeter or 1,000,000 nanometers.

however, argues that "binder" should be construed as a "polymer or mixture of polymers capable of forming a film or coating". (DuPont Responsive Claim Construction Br., at 33.)

The parties seem to agree that a "binder" can be a single polymer or a mixture of polymers. (MacDermid Markman Br., at 40; DuPont Responsive Claim Construction Br., at 33.) However, they disagree about whether such polymer(s) must be capable of forming a film or coating. The '859 patent's specification, in describing its preferred embodiments, states that a "thermoplastic binder can be a single polymer or mixture of polymers". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 6, lines 9-10.) Thus, as noted above in the discussion of "elastomeric binder", the specification expressly sets forth what constitutes a "binder".

The specification suggests binders suitable for use in the actinic radiation opaque layer of choice a. (Id. at col. 11, lines 43-65 & col. 12, lines 3-14.) It also suggests binders suitable for use in choice b. (Id. at col. 13, lines 11-26.) However, these suggestions in no way limit the proper construction of "binder" as that term is used in choice a or choice b. Moreover, although the specification acknowledges that "[g]enerally, a binder alone is capable of forming a film", the Court finds that this language also does not in any way limit the definition of "binder". (Id. at col. 12, line 59.) When read in

conjunction with other sections of the specification, this language is meant to clarify that a choice a or choice b thermally removable layer will have a "coating" thickness, and this "coating" may be formed solely by the binder contained in such layer. (See id. at col. 11, lines 37-40 ("Since the binder is present in greater proportion than the radiation opaque material and/or the infrared absorbing material, the thermally removable layer (a) forms a continuous film"), col. 12, line 59, col. 13, line 8 (describing "coating thickness of the thermally removable layer (b)").) It is not meant to limit the definition of "binder". Thus, the Court finds that the term "binder" in choice a and choice b means a single polymer or a mixture of polymers.

**i. "softening or melting temperature"**

Limitation 1(a) of claim 1 refers to "a softening or melting temperature less than 190°C". (Id. at col. 43, lines 26-27.) Specifically, limitation 1 states that the thermally removable layer comprising the photosensitive element may be "an actinic radiation opaque layer comprising (i) at least one infrared absorbing material, (ii) a radiation opaque material . . . , and at least one binder having a softening or melting temperature less than 190°C." (Id.) According to DuPont, the "softening or melting temperature" is "the temperature at which the viscosity of the binder found in the thermally removable layer is reduced

sufficiently so that the layer can be removed during the thermal development process.” (DuPont Markman Br., at 14; see DuPont Responsive Claim Construction Br., at 34.) In contrast, MacDermid asserts that DuPont’s proposed construction treats the terms “softening” and “melting” as synonymous, and thus, improperly prescribes a single meaning to two distinct claim terms. (MacDermid Br. in Opp. to DuPont Markman Br., at 7.) MacDermid further asserts that the phrase “softening or melting temperature” is indefinite because the ‘859 patent does not specify the method of measuring the softening temperature. (Id. at 8-10 (arguing that “[s]oftening temperature is the temperature at which material transforms a specific amount when measured under specific examination conditions”); see MacDermid Markman Br., at 40 (“‘[S]oftening’ is ambiguous unless a specific test/measurement method is specified, of which there are several. Notably the ‘859 specification does not provide how the softening temperature is to be measured.”).)

The specification contains the following statements, which reference the “softening” or “melting” of the thermally removable layer:

Thermally treating the element includes heating the exposed photopolymerizable layer and the thermally removable layer at a temperature sufficient to cause the unexposed (uncured) portions of the element to soften or melt or flow, and contacting the layer to an absorbent surface to absorb the melt or flow portions. The polymerized areas of the photopolymerizable layer

have a higher melting temperature than the unpolymerized areas and therefore do not melt, soften, or flow at the development temperatures. The term "melt" used to describe the behavior of the unirradiated portions of the photopolymerizable elastomeric layer subjected to an elevated temperature that softens and reduces the viscosity to permit flow and absorption by the absorbent material. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 20, lines 47-60.)

[S]o the process functions to absorb the heated composition layer at any temperature above some threshold for absorption in the absorbent material. A wide temperature range may be utilized to "melt" the composition layer for the purposes of this invention. (Id. at col. 20, lines 63-67.)

The photopolymerizable layer and the thermally removable layer/s are heated by conduction, convection, radiation, or other heating methods to a temperature sufficient to effect melting of the uncured portions but not so high as to effect distortion of the cured portions of the layer. The photosensitive element is heated to a surface temperature above about 40°C.; preferably from 40°C. to about 230°C. (104-446°F.), more preferably from about 100 to 200°C., and most preferably from 100 to 160°C. in order to effect melting or flowing of the uncured portions of the photopolymerizable layer and the thermally removable layer. The absorbent material contacts the surface of the heated photosensitive element, and absorbs the softened or molten or flowing portions of the elastomeric layer from the unirradiated portions, forming a flexographic printing plate in which the uncured portions are removed to form a relief pattern or surface. The thermally removable layer disposed above the photopolymerizable layer may soften or melt or flow and be absorbed as well by the absorbent material. (Id. at col. 21, lines 8-27.)

Thus, there are multiple references in the specification establishing that the "softening or melting temperature" refers only to the temperature necessary to sufficiently reduce the

viscosity of the binder contained in the thermally removable layer so that such layer may be absorbed by the absorbent material.

Construing the term "softening or melting temperature" does not require that the '859 patent either specifically state the amount that the viscosity of such binder must transform when heat is applied, or expressly differentiate between the terms "melting" and "softening". Instead, the Court is satisfied that the intrinsic evidence, including the specification and the context in which the term is used in limitation 1(a) of claim 1, provides a sufficient basis for construing "softening or melting temperature". See Phillips, 415 F.3d at 1314-15. Therefore, the Court construes "softening or melting temperature" as referring to any temperature at which the viscosity of the binder contained in the photopolymerizable layer will be reduced to such a point that the thermally removable layer, or portions thereof, may be removed by absorbing material.<sup>8</sup>

**j. "imagewise exposing"**

The second step in the process for making a flexographic printing plate described in claim 1 is "imagewise exposing the photopolymerizable layer to actinic radiation forming polymerized

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<sup>8</sup> It appears that "softening or melting temperature" also refers to any temperature at which the unpolymerized portions of the photopolymerizable layer will be removable.

portions and unpolymerized portions". (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 34-36.) According to MacDermid, "imagewise exposing" should be construed as meaning "[c]reating an image on the photopolymerizable layer through any method including conventional (analog) and digital methods". (MacDermid Markman Br., at 29.) MacDermid argues that its proposed construction is (1) mandated by claims 2 and 43 of the '859 patent, which contemplate the use of a "release layer" and a "phototool" for imaging, and (2) supported by the specification, which notes that the image necessary for imagewise exposure can be generated by conventional and digital methods. (Id.) In contrast, DuPont argues that "imagewise exposing" means "subjecting the photopolymerizable layer to actinic radiation to form polymerized and unpolymerized portions". (DuPont Responsive Claim Construction Br., at 27.)

The specification refers to "imagewise exposing" in, inter alia, the following statements:

In preparation for the next step in the process which is to overall expose the photosensitive element to actinic radiation through a mask, a mask image may need to be formed on or disposed above the surface of the photopolymerizable layer opposite the support. . . . The image necessary for the imagewise exposure can be generated by any method including conventional and digital methods including inkjet application. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 17, lines 6-10 & lines 17-20.)

[T]he mask image may be created on a separate carrier

and then transferred by application of heat and/or pressure to the surface of the photopolymerizable layer opposite the support. . . . The separate carrier can then be removed from the element prior to imagewise exposure. (Id. at col. 18, lines 25-31.)

[A] conventional method for imagewise exposure is by using an image-bearing transparency film or phototool . . . as the mask. (Id. at col. 18, lines 56-58.)

Imagewise exposure of the photosensitive element to actinic radiation may be conducted in the presence or absence of atmospheric oxygen for photosensitive elements having an in situ mask. (Id. at col. 19, lines 42-45.)

The imagewise exposed photosensitive element is then ready for the next step of the present process which is thermally treating the exposed element to develop the relief image or pattern. (Id. at col. 20, lines 44-47.)

These statements indicate that the desired image is in place on the in-situ mask before the "imagewise exposure" occurs. (See id. at col. 17, lines 17-20 (implying that the image is generated by any available method before the "imagewise exposure" occurs); col. 18, lines 25-31 (noting that the image may be created on a separate carrier that is removed before "imagewise exposure"); col. 18, lines 56-58 (referring to image-bearing in-situ mask being in place before "imagewise exposure"), col. 19, lines 42-45 (same).) Therefore, the Court disagrees with MacDermid that "imagewise exposing" encompasses creating an image on the photopolymerizable layer, and instead concludes that an image is



generated on the in-situ mask before the photopolymerizable layer is "imagewise exposed".

The Court also concludes that the term "imagewise exposing" is unambiguously defined in the '859 patent's specification. The specification states that once the in-situ mask is on or disposed above the photopolymerizable layer, the next step in the claimed process is to "overall expose the photosensitive element to actinic radiation through [the] mask, that is, imagewise exposure of the element." (Id. at col. 18, lines 50-53.) Thus, after reviewing the specification and the plain language of limitation 2 to claim 1, the Court finds that "imagewise exposing" means to overall expose the photosensitive element to actinic radiation through an in-situ mask. Accordingly, the Court agrees, in part, with DuPont's proposed construction of this term. However, the Court does not agree with DuPont's suggestion that the definition of "imagewise exposing" includes a reference to "form[ing] polymerized and unpolymerized portions." This language suggests the result of overall exposing the photosensitive element to actinic radiation through an in-situ mask, and thus, should not be included in this Court's construction of that action term.

**k. "polymerized"**

"Imagewise exposing" the photopolymerizable layer to actinic radiation creates "polymerized" and "unpolymerized" portions of the photopolymerizable layer. (Id. at col. 43, lines 34-36.)

MacDermid contends that "polymerized" means "[t]hose areas of the photopolymerizable layer exposed to actinic radiation resulting in cross-linked polymer chains". (MacDermid Markman Br., at 41.) In contrast, DuPont contends that "[t]his phrase is so readily recognized by those of ordinary skill in the art that [it] did not provide a proposed construction in its opening brief". (DuPont Responsive Claim Construction Br., at 35.) DuPont argues that MacDermid's proposed construction improperly imports functional limitations into the claim language. (Id. at 36.) Thus, in responding to MacDermid's Opening Markman Brief, DuPont states that the '859 patent's specification supports construing "polymerized" as meaning "[s]ubjected to polymerization to form a polymer." (Id. at 35-36.)

In limitation 2 of claim 1, "polymerized" is used as an adjective modifying the term "portions", which refers to portions of the photopolymerizable layer. The specification describes what occurs when portions of the photopolymerizable layer "polymerize" in the following statements:

The "clear" areas of the mask expose the photopolymerizable layer to actinic radiation and polymerize or crosslink. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 17, lines 15-17.)

[U]pon imagewise exposure to actinic radiation, the elastomeric capping layer has portions in which polymerization or crosslinking have occurred and portions which remain unpolymerized, i.e., uncrosslinked. (Id. at col. 9, lines 43-46.)

[T]he photosensitive element of the present invention is exposed to actinic radiation from suitable sources. . . . Exposure is of sufficient duration to crosslink the exposed areas down to the support. (Id. at col. 19, lines 4-5 & 12-13.)

The treating step removes at least the photopolymerizable layer in the areas which were not exposed to actinic radiation, i.e., the non-polymerized areas or uncured areas of the photopolymerizable layer. (Id. at col. 20, lines 29-32.)

Thus, the specification suggests that "to polymerize" is to crosslink or cure. See Phillips, 415 F.3d at 1315 (noting that specification is highly relevant to claim construction and usually dispositive). Further, Webster's Ninth New Collegiate Dictionary defines "polymerize" as (1) "to subject to polymerization", or (2) "to undergo polymerization". Webster's Ninth New Collegiate Dictionary 913 (1991); see Phillips, 415 F.3d at 1314 (noting that general purpose dictionaries may assist courts in determining widely accepted meanings of commonly used words). Therefore, after viewing the intrinsic evidence found in the patent and the extrinsic dictionary definition, this Court concludes the "polymerized" portions of the photopolymerizable layer referenced in limitation 2 of claim 1 should be construed to mean those portions that were subjected to or underwent crosslinking or curing. Accordingly, the Court does not adopt DuPont's proposed construction, which is too general, or MacDermid's proposed construction, which imports improper limitations on the term "polymerized".

**1. "thermally treating"**

Limitation 3 of claim 1 states that step 3 of the claimed process for making a flexographic printing plate comprises "thermally treating" the element described in step 2 "by heating to a temperature sufficient to remove the thermally removable layer and to remove the unpolymerized portions of the photopolymerizable layer and form a relief." (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 37-40.) DuPont argues that "thermally treating" should be construed in accordance with the plain language of claim 1 and the specification as meaning "heating to a temperature sufficient to substantially remove the remaining portions of the thermally removable layer and unpolymerizable layer to form a printing relief." (DuPont Markman Br., at 16-17; DuPont Responsive Claim Construction Br., at 36.) MacDermid, in contrast, argues that "thermally treating" is an absolute limitation that should be construed as meaning "to subject to heat sufficient to thoroughly remove: (1) the remaining portions of the thermally removable layer, and (2) the unpolymerized portions of the photopolymerizable layer." (MacDermid Br. in Opp. to DuPont Markman Br., at 10 (emphasis in original); see MacDermid Markman Br., at 42 (stating that "thermally treat" consists of two common words, and thus, in accordance with their ordinary meanings it should be construed as "to subject to heat").)

The Court notes that the plain language of limitation 3 to claim 1 expressly states that the element of step 2 is thermally treated by heating it to a temperature sufficient to remove both the thermally removable layer and the unpolymerized portions of the photopolymerizable layer. (Dkt. entry no. 31, Bradley Decl., Ex. 1, '859 patent, at col. 43, lines 37-40.) Also, the specification refers to "thermally treating" in the following statements:

The process includes imagewise exposing the photopolymerizable layer to actinic radiation forming polymerized portions and unpolymerized portions and thermally treating the imagewise exposed element by heating to temperature sufficient to remove the thermally removable layer and to remove the unpolymerized portions of the photopolymerizable layer and form a relief. (Id. at col. 5, lines 12-18.)

Thermally treating the element includes heating the exposed photopolymerizable layer and the thermally removable layer at a temperature sufficient to cause the unexposed (uncured) portions of the element to soften or melt or flow, and contacting the layer to an absorbent surface to absorb the melt or flow portions. (Id. at col. 20, lines 47-52.)

The thermal treating steps of heating the photopolymerizable layer and the thermally removable layer and contacting the layer/s with an absorbent material can be done at the same time, or in sequence provided that the uncured portions of the photopolymerizable layer are still soft or in a melt state when contacted with the absorbent material. (Id. at col. 21, lines 3-8.)

The plain language of limitation 3 states that "thermally treating" is done by heating to a temperature sufficient to

remove both the thermally removable layer and the unpolymerized portions of the photopolymerizable layer. (Id. at col. 43, lines 37-40.) However, the Court agrees with MacDermid that neither the specification nor the plain language of claim 1 suggest that "thermally treating" requires heating to a temperature sufficient to "substantially" remove these layers. Instead, the term "remove" in both limitation 3 of claim 1 and in the relevant portions of the specification discussed above is not modified by any adverb. Thus, the Court will not construe "thermally treating" as involving heating to a temperature sufficient to "substantially" or "thoroughly" remove the discussed layers, as DuPont and MacDermid respectively suggest. Webster's Ninth New Collegiate Dictionary defines "remove" as, inter alia, (1) "to move by . . . taking away or off, and (2) to get rid of". Webster's Ninth New Collegiate Dictionary 997 (1991); see Phillips, 415 F.3d at 1314 (noting that general purpose dictionaries may assist courts in determining widely accepted meanings of commonly used words). Thus, the Court construes the term "thermally treating" as simply meaning heating to a temperature sufficient to take away or get rid of both the thermally removable layer and the unpolymerized portions of the photopolymerizable layer and form a relief.

## **2. Infringement of Claim 1**

DuPont asserts, in support of its motion for preliminary injunction, that "MacDermid's promotion and marketing of its LAVA thermal processing system, combined with DuPont's testing of MacDermid's MLT and Magma flexographic printing plates, demonstrates that when these plates are thermally processed or developed, at least Claim 1 of the '859 patent is infringed". (DuPont Br., at 19.) In opposing DuPont's motion, MacDermid does not dispute DuPont's assertion that thermally developing MacDermid's MLT and Magma flexographic printing plates using MacDermid's LAVA processing equipment infringes claim 1 of the '859 patent. (See MacDermid Br.; DuPont Reply Br., at 1.) Instead, MacDermid challenges the validity and enforceability of the '859 patent. (See MacDermid Br.; MacDermid Br. in Opp. to DuPont Markman Br., at 3 (stating that a proper construction of the '859 patent's claims leads to a number of inexorable conclusions, including that the patent is invalid as anticipated).) Thus, for purposes of deciding this preliminary injunction motion only, the Court will assume that MacDermid's products contain every limitation contained in claim 1 of the '859 patent, as construed supra. See Laitram Corp., 939 F.2d at 1535. Accordingly, the Court finds that DuPont has shown a reasonable likelihood that it can prevail on the infringement analysis.

### 3. The Validity of the '859 Patent

#### a. Section 102(b)

Section 102(b) provides that a person is not entitled to a patent if "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States". 35 U.S.C. § 102(b); see Helifix Ltd. v. Blok-Lok, Ltd., 208 F.3d 1339, 1346 (Fed. Cir. 2000). Under this provision, the Court can invalidate a patent as "anticipated" or by reason of the "on-sale bar" or "public use bar". Helifix Ltd., 208 F.3d at 1346, 1349.

The Court begins an on-sale bar analysis by determining whether the product was "the subject of a commercial offer for sale". Id. at 1349 (noting that the Supreme Court has held that the on-sale bar applies when two conditions are met before the critical date); see Invitrogen Corp. v. Biocrest Mfg., L.P., 424 F.3d 1374, 1379 (Fed. Cir. 2005) (stating that the Court must evaluate "whether the product was subject to a commercial offer for sale (i.e., was it 'on sale')"). Next, the Court determines whether the invention was ready for patenting at the time it was allegedly on sale. Invitrogen Corp., 424 F.3d at 1379 (stating that the Court must evaluate "whether the invention was 'ready for patenting' (i.e., was there an 'invention' at the time of the sale)"); Helifix Ltd., 208 F.3d at 1349. "That condition may be



satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." Pfaff v. Wells Elec., Inc., 525 U.S. 55, 67 (1998); Helifix Ltd., 208 F.3d at 1349-50 (noting that the party asserting the on-sale bar defense would prevail if "at the time of the [trade] show, the method of claim 1 had been reduced to practice"). The party asserting that the patent claim is invalid by reason of the on-sale bar can show reduction to practice by demonstrating that any product existed that met the limitations recited in the claim at issue at the time of the alleged sale. See Helifix Ltd., 208 F.3d at 1350 ("[R]eduction to practice of the claimed method does not require reduction to practice of the specific tool described in the '801 patent, but merely requires the development of any tool that meets the limitations recited in the claim.").

The public use bar of Section 102(b) requires the Court to determine whether the purported use was (1) accessible to the public, and (2) commercially exploited. Invitrogen Corp., 424 F.3d at 1380. "Thus, the test for the public use prong includes consideration of evidence relevant to experimentation as well as, inter alia, the nature of the activity that occurred in public; public access to use; confidentiality obligations imposed on

members of the public who observed the use; and commercial exploitation". Id.

MacDermid argues that it has raised a substantial question concerning the validity of claim 1 of the '859 patent under Section 102(b). (MacDermid Br., at 12.) Specifically, MacDermid asserts that the '859 patent is invalid because, inter alia, DuPont's public use and offer for sale of Cyrel preceded the critical date. (Id. at 14.) The original application for the '859 patent was filed on February 27, 2002. (Dkt. entry no. 46, Mahanna Decl., Ex. 2, at A-2, 2-27-02 Utility Patent Application Transmittal.) Thus, MacDermid asserts that the critical date is February 27, 2001. (MacDermid Br., at 14.) Moreover, MacDermid contends that DuPont's Annual Reports for 1999, 2000, and 2001 indicate that DuPont's Cyrel was in public use and offered for sale well before February 27, 2001. (Id. at 15-16 ("If the annual reports are accurate, then DuPont introduced [Cyrel] in 1999, introduced a 'second generation' of 'digital' [Cyrel] in 2000, and 'significantly increased' installations of [Cyrel] in 2001").) MacDermid also contends that DuPont admitted that it demonstrated its digital Cyrel at a Labelexpo trade show on September 13, 2000, and thus, the '859 patent is invalid because it was in public use more than one year prior to the date of the patent application. (MacDermid Surreply Br., at 1; see dkt. entry no. 57, 2d Zoelle Dec., Ex. 2, 9-13-00 Press Release ("All

the prepress steps for a typical label from design and layout, to color proofing, laser imaging, to digital flexo plate, exposure and plate production were shown. Exhibit visitors were able to follow the process at each step and actually examine the finished printing plate as it came off the 1000TD processor.".)

DuPont, however, explains that these excerpts from its annual reports relate to analog thermal flexographic technology, but "digital thermally developable flexographic technology is the only technology at issue for purposes of Claim 1 of the '859 patent". (DuPont Reply Br., at 4 (stating that analog Cyrel was first introduced in 1999 and was commercially offered for sale in the beginning of 2000).) It also notes that digital Cyrel was shown for the first time in September of 2000 but was first commercially offered and sold in June of 2001. (Id. at 4-5.) Thus, DuPont contends that "MacDermid's reliance on isolated statements in DuPont's Annual Reports fails to raise a substantial question regarding the validity of Claim 1". (Id. at 5.)

DuPont submitted a letter to this Court on March 15, 2007, stating that "[f]urther investigation has revealed that the '859 patent was based upon, and claims priority to a provisional patent application, 60/273,669, filed on March 6, 2001" (the "provisional application"), and thus, the '859 patent can only be held invalid under Section 102(b) if it was described in a

printed publication or in public use before March 6, 2000. (Dkt. entry no. 85, 3-15-07 Catenacci Letter.) See Plumtree Software, Inc. v. Datamize LLC, 473 F.3d 1152, 1160 (Fed. Cir. 2006) (noting that the patent at issue claimed priority to a provisional patent application filed on February 27, 1996, and stating that for purposes of the Section 102(b) on sale bar, the critical date was February 27, 1995). During a telephone conference held on March 16, 2007, the Court denied MacDermid's oral motion to expunge DuPont's March 15, 2007 letter but permitted MacDermid to file a letter brief outlining its objections. (Dkt. entry no. 86, Minutes of 3-16-07 Telephone Conf.)

MacDermid submitted a letter on March 23, 2007 arguing, inter alia, that (1) DuPont made numerous judicial admissions that the critical date for the '859 patent was February 27, 2001, and it cannot establish exceptional circumstances, which would warrant this Court avoiding the binding effect of such admissions, (2) "DuPont's numerous and unequivocal admissions concerning the critical date are more than sufficient to create a substantial question concerning the validity of the '859 patent", (3) DuPont cannot present new evidence in support of its motion for preliminary injunction at this juncture because the record is closed, (4) DuPont cannot claim the benefit of the provisional application for numerous reasons, including that it did not claim

priority to the provisional application and the PTO did not recognize any such priority during prosecution of the '859 patent, and (5) MacDermid would be unfairly prejudiced if DuPont is permitted to reopen the preliminary injunction record and present evidence contrary to its previous judicial admissions.

(Dkt. entry no. 89, 3-23-07 MacDermid Letter, at 4-8.) MacDermid emphasized that DuPont benefitted by failing to initially mention the provisional application because it avoided MacDermid arguing that the '859 patent is invalid because it lists four additional inventors that are not named in the provisional application.

(Id. at 5.) But see 35 U.S.C. § 256 ("The error of omitting inventors or naming persons who are not inventors shall not invalidate the patent in which such error occurred if it can be corrected as provided in this section."); Railhead Mfg., L.L.C. v. Vermeer Mfg. Co., 298 F.3d 1290, 1294 (Fed. Cir. 2002)

(explaining that for a non-provisional patent application to claim the priority of a provisional patent application, "the two applications must share at least one common inventor and the written description of the provisional must adequately support the claims of the non-provisional application").

MacDermid also emphasized that DuPont only secured issuance of the '859 patent because Adrian Lungu, a named co-inventor of the '859 patent who was not listed on the provisional application, submitted a declaration indicating that the claimed

invention had been completed in the United States on or before June 9, 1999, but the provisional application was filed in March of 2001 and does not name Adrian Lungu as an inventor. (Dkt. entry no. 89, 3-23-07 MacDermid Letter, at 5; see dkt. entry no. 46, Mahanna Decl., Ex. 2, at G-1 to G-14, 3-29-04 Resp. & Lungu Decl.) Thus, MacDermid argues that DuPont failed to adhere to Section 111, which requires all patent applications and provisional applications to be filed in the name of the inventors. (Dkt. entry no. 89, 3-23-07 MacDermid Letter, at 5.) Finally, MacDermid noted that it made certain strategic decisions, such as waiving its right to an evidentiary hearing, based on DuPont's admissions concerning the critical date, and it would be foreclosed from properly contesting DuPont's right to the benefit of the provisional patent if DuPont is allowed to change its admissions at this stage. (Id. at 7.)

DuPont, in contrast, asserts that MacDermid is asking the Court to ignore the prosecution history of the '859 patent, which will ultimately result in the '859 patent having a filing date of February 27, 2002 for purposes of the preliminary injunction motion and a filing date of March 6, 2001 for all subsequent motions and other activities in this case. (Dkt. entry no. 92, 3-29-07 DuPont Letter, at 2.) Further, DuPont argues, inter alia, that (1) it properly claimed priority to the provisional application by filing an Application Data Sheet with its February

27, 2002 patent application, (2) for a patent application to claim priority to a provisional patent application both applications must share one inventor in common and the '859 patent and the provisional application at issue here do share one inventor in common, (3) judicial admissions are not absolute, and thus, DuPont is not precluded from updating its understanding of events based upon recently uncovered information, and (4) MacDermid has not demonstrated that it will be prejudiced if the Court considers the prosecution history of the '859 patent and determines that the patent is entitled to a March 6, 2001 filing date. (Id. at 2-8.)

The Court finds that DuPont has not shown that MacDermid's asserted defense that the '859 patent is invalid under either the public use or on-sale bars of Section 102(b) lacks substantial merit. See Abbott Lab., 452 F.3d at 1335. The parties dispute whether any exceptional circumstances warrant this Court to reopen the preliminary injunction record and permit DuPont to argue that the critical date for the public use and on-sale bars is actually March 6, 2000 rather than February 27, 2001. Even if the Court permits DuPont to now argue that March 6, 2000 is the critical date, such statement would require evidence that was not proffered in DuPont's briefs in support of its motion or during oral argument. Further, the Court agrees with MacDermid that DuPont's numerous assertions that the critical date is February

27, 2001 and its subsequent letter stating that the critical date is actually March 6, 2000 raise substantial questions regarding whether the invention of the '859 patent was in public use or on sale one year prior to the date of the applicable patent application. This Court concludes that DuPont has not overcome these substantial questions based on the present record, and thus, granting the preliminary injunction is not appropriate. Nevertheless, the Court notes that its holding should not imply that the record supports a determination that the '859 patent is invalid, or that summary judgment of patent validity is not possible on a more fully developed record. See id. at 1335 (noting that "[v]ulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial").<sup>9</sup>

**b. MacDermid's Other Validity Arguments**

In light of the Court's holding with respect to MacDermid's arguments under Section 102(b), the Court will not address MacDermid's remaining invalidity and unenforceability arguments at this time.

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<sup>9</sup> If the Court of Appeals determines that it is preferable that this Court make factual findings on the issue of the correct "critical date", for purposes of deciding this preliminary injunction motion, we will permit both parties to fully brief that issue and we will consider any request for an evidentiary hearing limited to that issue.



**B. Irreparable Harm, Balance of Hardships, and the Public Interest**

Although the parties do not dispute, for purposes of this preliminary injunction motion, that "in light of the presumptions and burdens that will inhere at trial on the merits" DuPont will likely show that MacDermid's LAVA products infringe claim 1 of the '859 patent, DuPont has not shown a likelihood of success on the merits with respect to the '859 patent's validity. See Genentech, Inc., 108 F.3d at 1364; Entegris, Inc., 2007 U.S. App. LEXIS 13812, at \*32. Accordingly, the Court need not address the remaining preliminary injunction factors. PHG Tech., LLC, 469 F.3d at 1365 (explaining that a movant cannot be granted a preliminary injunction unless it establishes likelihood of success on the merits).

**CONCLUSION**

The Court, for the reasons stated supra, will deny the motion. The Court will issue an appropriate order.

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s/ Mary L. Cooper  
**MARY L. COOPER**  
United States District Judge